Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A process for preparation of a fluorohaloalkane of formula (I)

$$X—(CH_2)_n—F \qquad (I)$$

wherein X is halo and n is an integer of from 1 to 6; which comprises:

~~reaction of the corresponding~~ reacting an organosilicon compound of formula (II):

$$R''—Si(R')(R''')—(CH_2)_n—F \qquad (II)$$

wherein n is as defined for the compound of formula (I); and

R', R", and R"' are independently ~~selected from~~ C_{1-6} alkyl ~~and~~ or C_{1-6} haloalkyl; and

R'' may alternatively be the group:

;

with a compound of formula (III):

$$XY \qquad (III)$$

wherein X is as defined for the compound of formula (I) and Y is halo.

2. (Currently Amended) A process according to claim 1 for preparation of a [^{18}F]fluorohaloalkane of formula (Ia)

$$X—(CH_2)_n—{}^{18}F \qquad (Ia)$$

wherein X is halo and n is an integer of from 1 to 6; which comprises:

~~reaction of the corresponding~~ reacting an organosilicon compound of formula (IIa):

$$R''—Si(R')(R''')—(CH_2)_n—{}^{18}F \qquad (IIa)$$

wherein n is as defined for the compound of formula (Ia); and

R', R", and R"' are independently ~~selected from~~ $C_{1\text{-}6}$ alkyl ~~and~~ or $C_{1\text{-}6}$ haloalkyl; and

R'' may alternatively be the group:

;

with a compound of formula (III):

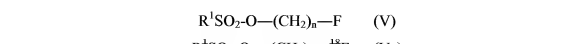
$$XY \qquad (III)$$

wherein X is as defined for the compound of formula (Ia) and Y is halo.

3. (Currently Amended) A process according to claim 1 which comprises the further step:

(i) ~~isolation of~~ isolating the compound of formula (I) ~~or (Ia)~~; and/or

(ii) ~~conversion of~~ converting the compound of formula (I) ~~or (Ia)~~ to a corresponding fluoroalkylsulphonyl ester of formula (V) ~~or (Va) respectively~~:



$$R^1SO_2\text{-}O—(CH_2)_n—F \qquad (V)$$

~~$R^1SO_2\text{-}O—(CH_2)_n—{}^{18}F \qquad (Va)$~~

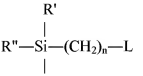
wherein n is as defined for the compound of formula (I) ~~or (Ia),~~ and R^1 is ~~selected from~~ C_{1-6} alkyl, C_{1-6} perfluoroalkyl, aryl, tolyl, perfluoroaryl, ~~and~~ or perfluorotolyl.

4. (Currently Amended) A process according to claim 1 which comprises the further step:
(i) preparing a fluoroalkyl ligand or radiotracer from ~~use of~~ the ~~resulting~~ compound of formula (I) ~~or (Ia) in the preparation of a fluoroalkyl ligand or radiotracer, such as a [^{18}F]fluoroalkylated radioligand or [^{18}F] radiotracer~~.

5. (Currently Amended) A process according to claim ~~[4]~~ 13 wherein the radioligand or radiotracer prepared is ~~selected from~~:
2-(1,1-dicyanopropen-2-yl)-6-(2-[^{18}F]-fluoroC_{1-6}alkyl)-methylamino)naphthalene,
3-(2'-[^{18}F]fluoroC_{1-6}alkyl)spiperone,
[^{18}F][2-fluoroC_{1-6}alkoxy-5-(5-trifluoromethyl-tetrazol-1-yl)-benzyl]-([2S,3S]-2-phenyl-piperidin-3-yl)-amine,
2-beta-carbomethoxy-3-beta-(4-iodophenyl)-8-(3-[^{18}F]fluoroC_{1-6}alkyl)-nortropane,
[^{18}F]fluoroC_{1-6}alkylflumazenil, ~~and~~ or
[^{18}F]fluoroC_{1-6}alkyl-choline.

6. (Currently Amended) A process according to claim ~~[4]~~ 13 wherein the [^{18}F]fluoroalkylated radioligand prepared is ~~selected from~~:
2-(1,1-dicyanopropen-2-yl)-6-(2-[^{18}F]-fluoroethyl)-methylamino)naphthalene,
3-(2'-[^{18}F]fluoroethyl)spiperone,
[^{18}F][2-fluoromethoxy-5-(5-trifluoromethyl-tetrazol-1-yl)-benzyl]-([2S,3S]-2-phenyl-piperidin-3-yl)-amine),
2-beta-carbomethoxy-3-beta-(4-iodophenyl)-8-(3-[^{18}F]fluoropropyl)-nortropane,
[^{18}F]fluoroethylflumazenil),
[^{18}F]fluoromethyl-choline, ~~and~~ or
[^{18}F]fluoroethyl-choline).

7. (Currently Amended) A process for the preparation of a compound of formula ~~(II) or~~ (IIa) as defined in claim ~~1~~ 2 which comprises ~~reaction of~~ reacting a compound of formula (IV):

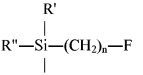


(IV)

wherein n, R', R'', and R''' are as defined for the compound of formula ~~(II) or~~ (IIa), and L is a leaving group;

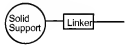
with a source of ~~F⁻, preferably~~ $^{18}F^-$ in the presence of a phase transfer catalyst.

8. (Currently Amended) A compound of formula (II):

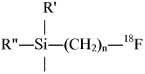


(II)

wherein n is an integer of from 1 to 6; and
R' and R''' are independently ~~selected from~~ C_{1-6} alkyl ~~and~~ or C_{1-6} haloalkyl; and
R'' is the group:



9. (Currently Amended) A compound of formula (IIa):



(IIa)

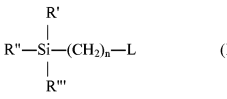
wherein n is an integer of from 1 to 6; and

R', R", and R"' are independently ~~selected from~~ C_{1-6} alkyl ~~and~~ or C_{1-6} haloalkyl; and

R'' may alternatively be the group:

.

10. (Currently Amended) A compound of formula (IV):

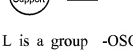


(IV)

wherein n is an integer of from 1 to 6;

R', R", and R"' are independently ~~selected from~~ C_{1-6} alkyl ~~and~~ or C_{1-6} haloalkyl; and

R'' may alternatively be the group:



;

L is a group $-OSO_2R^2$ wherein R^2 is ~~selected from~~ C_{1-6} alkyl, C_{1-6} perfluoroalkyl, aryl, perfluoroaryl, tolyl, ~~and~~ or perfluorotolyl;

provided that:

(a) when R'' is C_{1-6} alkyl or C_{1-6} haloalkyl, n is not 1; and

(b) when R'' is C_{1-6} alkyl or C_{1-6} haloalkyl and n is 2 to 6, L is not $-OSO_2CH_3$ or $-OSO_2$(*para*-methyl)phenyl.

11. (New) A process according to claim 2 which comprises the further step:

(i) isolating the compound of formula (Ia); and/or

(ii) converting the compound of formula (Ia) to a corresponding fluoroalkylsulphonyl ester of formula (Va):

$$R^1SO_2\text{-}O\text{—}(CH_2)_n\text{—}^{18}F \quad \text{(Va)}$$

wherein n is as defined for the compound of formula (Ia), and R^1 is $C_{1\text{-}6}$ alkyl, $C_{1\text{-}6}$ perfluoroalkyl, aryl, tolyl, perfluoroaryl, or perfluorotolyl.

12. (New) A process according to claim 2 which comprises the further step:
(i) preparing a fluoroalkyl ligand or radiotracer from the compound of formula (Ia).

13. (New) The process according to claim 12, wherein:
the fluoroalkyl ligand or radiotracer is a [^{18}F]fluoroalkylated radioligand or [^{18}F]-radiotracer.